

# Home

An Amiga Newsletter Publication

# Computing WEEKLY

45p

**Win**  
a 'flight' on a real  
computer

**WIN** video  
tapes and learn  
about your  
computer from

**MASTER  
CLASS**

**FREE**  
spectrum  
screen designer

**Software  
reviews for:**  
BBC, Spectrum,  
ZX81, Dragon,  
Texas, Sord

**RAM-saving  
graphics routines  
for CBM 6-4**

**Games to type in  
for: Spectrum,  
ZX81 and VIC-20**

**How to make  
your Cric/Amstrad  
make music**

**PLUS: U.S. Scene,  
news, letters,  
charts...**

**Two great FREE  
competitions**

**No. 63**  
**May 22-28, 1984**



## Battle begins over budget software

More budget-priced software has been launched, starting a three-sided battle for pocket money.

All three companies have a background in video film distribution and Mastertronic, which started the trend with a range in D 90, robotics dealers have bought more than 1.5m tapes in less than seven months.

Now it has been joined by Advance Computer Entertainment and Activision Software.

ACE boss Marky Shepherd first brought out his 19 titles in £1.99 — they dropped to £1.99 when he learned of Mastertronic's pricing.

He said, "We knew them very well because we started video films in the same outlets. We could not drop to £1.99 and not increase it would lose money."

"Whether any film, ours are far better than Mastertronic's. All our games will be new — we

*Continued on page 5*

## Moves to block piracy

Software duplication companies are moving on buying prices and have released new systems which they hope will be foolproof.

Discode is marketing a loading system called Power Load, developed by Incomm Software, and Bill Magnuson has a new technique called Impact 2.

Discode's Power Load uses data compression techniques, reducing the loading time to more than twice. Mike Ferguson, marketing manager, said "At Discode we say in the business of copying software but this is unacceptable. I've tried my hardest and I can't break it. I have techniques which 99 per cent of the public wouldn't know about — and I can't crack it."

"I can get the headers in five days as far as I can get. These tapes won't make copy or machine copy. The technique is that it is on hardball tape, which would normally load in five minutes on the Spectrum

*Continued on page 5*

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# Home Computing WEEKLY

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helpings for  
these computers  
— and more —  
in this issue of  
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# You could be on our pages

**we welcome programs, articles and tips from our readers. If you feel that your work merits our consideration, please submit it to us by the following dates:**

- **Programs must always be sent on disksette.** Listings are helpful, but not necessary. Check carefully that they are bug-free. Include details of what your program does. How it works. Anything you have used and articles on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to be as clear as possible. Articles will help our readers make better use of their money by giving useful ideas.
- **Programs with programming examples.** We will convert any selected listings into a standard format. We will publish any selected listings into a standard format.
- **Tip and short articles.** Any brief and programming pointers. Your hints can aid other computer users.
- **Advertisements.** We will accept any selected advertisements into a standard format. We will publish any selected advertisements into a standard format.

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## Learning is fun

Play and learn with Clover Clips, the first five-person course you have recently looked up with Apple's First Software. Two new games have just been released: Star Tracker for age 9-4 and Music for 7-4.

Star Tracker's your mission is to reach beyond hyperspace and bring back power crystals. You must learn quickly correctly in order to be able to buy fuel and components or locate the Power Field. Your aim is to fill your tank in the shortest possible time — that you can print out a Score Certificate, certificate of how successful.

Music: This package is three tapes in one — Piano, Player, Composer and Musical Quiz. The program can be updated or the difficulty level increased. Apple, First Software, No. 1 Chelsea Square, London W1R 1JL.

## Play and learn

New from Camsoft: Science Stampede, for the BBC 12K, more. Stampede supplies to game the museum while being instructed by Harold Horrod and helpful Horrod. Watch out for exploding bombs or crashing buses! Camsoft costs £7.95, 40 track disc 10.50.

Also from Camsoft for the BBC 12K and Electron: Playbox, a combination of three programs in one tape. Playbox is a game for two, in which you must get off a series of pictures. Playbox has a vocabulary of 200 words and Bookworm keeps you trapped behind a brick wall until you can break out by answering the general knowledge questions.

Price for this package is £6.95 for cassette and £8.50 for 40 track disc.

Camsoft, 7 Roman Drive, Levens, West Yorkshire LS2 8MR.

## Fantasy fun

The Lands of Midway is a new game from Beyond for the 48K Spectrum. Described as "The first fantasy novel," it's an epic game which has similarities to The Lord of the Rings.

You may use your Spectrum printer to print out a beautiful record of the game, and Beyond is offering to mark the adventures of the first successful candidate into the first ever computer-generated novel. Price £9.95. Beyond, Dorset House, 5 Bedford Way, London EC1R 4JY.

## Mammoth micro shop

What is reputed to be the world's largest computer store has opened in London, at Southbridge Park on the North Circular. Singer has dedicated 21,000 square feet of floor space to home and business computers. Software is also carried for both educational and games packages are sold at competitive prices.

John Patterson, director, said: "For the first time customers have got everything they need under one roof, from the smallest computer to a dedicated multi-user system."

He continued: "We support our products with skilled, trained people. Our programme of after sales support and maintenance is second to none. Our long-term aim is to open a chain of Singer-owned or franchised shops and achieve nationwide coverage."

As an introductory offer, Singer is dedicating up to 30 per cent from an Apple store, and presenting a secondary line too.

Singer Music, North Circular Southbridge Park, London NW10 2GG.

## Face foes, rescue maidens!

Play more games and one today is just out from English Software for Atari, each costing £9.95. In the Adventures of Robin Hood, led the Sheriff of Nottingham, meet the silver and rescue Maid Marian.

Then the Black has stolen the giant Diamond and hidden it at the deepest vault in the Stinker Back, you must make your way through the water avoiding the crocodile and trampling on the undergrowth.

Crescent Waters 128K is a game in which your mission is to save the world from evil forces, but on discovering secret cities with their evil lords. Napoleon's Shogun is an original game in which the Son of Napoleon saves Napoleon's beautiful daughter and comes down off to his law.

Your task is to leave the Sea Nymph and rescue the maiden.

Alan Campbell's Wizard enables you to create new characters and rules and create players against in the same time it eliminates the need for a separate player and character color. Display Software, Box 43, Manchester M19 1AD.

# Cut-price CBM 64 music box

My attention is drawn most readily to programs having to do with money. Therefore, I was intrigued by the announcement by Monnex Engineering Software (MES) of its latest product for the Commodore 64. It is called Synthesound 64. As you may know, the 64 has a chip inside it called SID (for Sound Interface Device) that is capable of producing all sorts of new music.

Unfortunately, it was designed to be PEEKed and POKEed from BASIC, which is a very tedious way to maintain some concerning and tedious, way of getting the job done. In this manner it usually takes hours to design tunes that play for seconds. But that is all over now. Using the MES program, you no longer have to be a programming genius to get fantastic results. You will need some specialized knowledge of musical synthesizers, but that knowledge is passed along to you by the program itself, which in addition is being useful to other musicians.

The program teaches all about the various electronic music instruments and systems, as well as teaching about the limitations and capabilities of the SID chip. The program allows the creation of up to eight five frequency oscillators, two piano style keyboards displayed on the screen, a slide in slide out result up to 256 predetermined pitch settings, and has the disc drive as a "tape recorder" on which you can store as many as nine tunes and save up to 256 predetermined settings. A simple demo is included with the program which shows off its tremendous capabilities.

Among other things, the program is capable of producing three-note chords, something which, until very recently, all except the most expensive music synthesizers were not capable. Even at present, the most reasonably priced three note synth costs less than a £1M 64 system. It is also possible to match the pitch of the unit to other instruments by using the left and right arrow keys to increase or decrease the pitch in precise increments — which playing is real time.

The program also has some facilities of which you should be aware. It error handling is best than expert and accurately the keyboard will go dead, requiring a complete reboot. Since the keyboard is used for entering the notes, it is obviously not going to be played as effectively as a real keyboard instrument, nor is the sound going to resemble that produced by a commercial grade synth. Still, no other special hardware is required to produce music, and there seems to be no other place you can turn to such cheap electronic music for such a low price.

The program costs all of £19.95 (if available from your local MES dealer, you can request directly to Monnex Engineering Software, 150 North Hill Drive, Broken 96005, (415) 452-4111).

Hands Across The Water Dept. Our GTS (Global Telephone and Telex) Telex Communications and South Telecom have just announced a jointly developed system of international inter-connections faster and cheaper. The new service also will require pre-specified inter-connections with standard symbols and unique computers — or even dedicated word processors — in order to send messages to the U.S. The system is called International One, and will reduce the cost of standard inter-connections from 12 or 13 per minute to as low as 17 cents per minute plus 98 cents for every 400 characters transmitted. Hey, that's a more efficient way of getting no volume to you.

No more space now. See you next week.

Paul Ivers  
Fairfield, California



**Come fly  
with us**

**FASTEN** your seat belt and  
everyone else takes off!

That is what I think is what is often in a lot of people's mind. However, you won't be going anywhere as you'll see that you are still in the same place. You think you're going to be in the same place.

Be the man of your friends when you take a role in a narrative or high drama and military plot.

You'll travel to Rockefeller's head offices in Clonmel, near Clonmel. You may be 10 or more and accompanied by an adult. Home Computing Weekly will pay for your travel expenses.

High-Density Simulation is the largest simulator produced in Europe. The use of High Simulation is an active marketing experience as it allows users to learn through practice. The High disk has built-in measurement & comparison results. High-Density Simulation is the largest simulator produced in Europe. The use of High Simulation is an active marketing experience as it allows users to learn through practice. The High disk has built-in measurement & comparison results. High-Density Simulation is the largest simulator produced in Europe. The use of High Simulation is an active marketing experience as it allows users to learn through practice. The High disk has built-in measurement & comparison results.

You can choose your weather — sunny or rainy, blizzard or mild — and go for the weather — or not — you want.

Islands of *Psylliodes*?, numerous  
found along and there is a  
comprehensive range from 1810  
to 1815.

As a lasting memento of this remarkable and exciting day out, Hydrocane will send you a photograph of yourself as seen in your aerial.

Additional papers on image processing and 15 chapters of *Picture Processing, Digital Image-based Systems, Image Synthesis, Visual Display* (1991).

Transform your frog into a character in your play this real-time game. Based on the UNAF system, the Fd Eagle, the 10 players give you the chance of making

The creator of *Figure Five*, Dick Marshall, is an expert — he's a former Master of Defense photo and he's flown Hunters and Ice Falcons, so he's got inside knowledge.

**So what are you waiting for?** The response is a straightforward one: **Get the pre-scan done.** Don't forget to write your tag on your study, **imagine**

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You may also receive as many as 10 copies of your work provided each is on the official notepaper and coupon and at a certain postage. Coupons will not be accepted. Please do not enclose anything else.

Send your story to: **Smashcom Competition, Home Computing Weekly, P.O. Golden Square, London W1R 3AL.**

Choosing date is at first post on Friday June 8, 1994. The top prize, a ride in a Red Bull race car, will be awarded to the reader of the first correct entry posted at midday. Winners will be the readers of the next 25 correct entries posted at random. All will receive a copy of *Figure Four* from Digital Imagination for the \$100,000.

The winners of the challenge prize must be accompanied by an idea, companion. The original Mobilization of Ideas in Chicago will be on a state government in California. Home Computing Weekly will cover another every quarter from a different U.S. region.

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1998



**Figure 6**

10

### References and related links (continued)

Complete simply and fully — of you and a program — they will use as a field tool in business campaigns, from campaign weeks to lobbying efforts. Contact 800-368-1844. Working about five years, today more 1,000 people receive the newsletter in the New York Times. Instead of being a source of information, you stand at the back of the





## Croakitt \$2K BBC £5.95

Amiga, 20 Centronics Rd, Brent  
Hill HA11 3BE

There has to be a limit on the number of versions of a single game the market can stand (as in the case of *Brigade*). The case is most here proven (in my view) I was somewhat taken aback therefore to realise this was for free.

It is a perfectly respectable version with most of the features you expect: onscreen driver, motor capabilities, smooth animation and a reasonably playing speed, although I prefer the latter version entitled *Croakitt*.

Smokes, lies, body flops and succeeds in all. Have fun!

DEFINITION: A game for you. There are a few features which do make this stand out from the crowd, although I don't feel they are improvements. The first does use change artwork when you change direction, there is only one forward facing frog on screen, and it is made of tape with moving in the water direction and there are no more than one fly on the screen at once.

Either one has to watch a mass market and not the best available. For all that.

graphics	20%
playability	20%
graphics	10%
value for money	20%

★ ★ ★

## Rocky \$2K BBC £7.95

Supreme Software, Dept C,  
Centronics Plus, Hayes House,  
Mosses Lane, Leeds

This game has nothing on its work boots!

Interactions are given during the loading process and are more adequate. A nice extra is the scoring score table, on which you can see your score even should it prove good enough!

The major drawback of the game is that the graphics are small. The small characters make the game appear to be really fast.

You have to beat the clock by stepping onto it. They have one last try which results a yellow flash of light. If you're caught in this,

your strength is sapped and if you're not carrying it up to the finish and automatically set a condition to appear.

The game is unusual in a sense. Two separate keys are used to pick up rocks and drop them. This makes the game very difficult. None of your 'muscle players' will dare play to be able to pick up this sort of game with no problem, but dare people like myself would have great difficulty.

Of all that, I wouldn't have it.

graphics	20%
playability	20%
graphics	20%
value for money	20%

★ ★ ★

## Bumble Bee BBC B £7.95

Power, 2000 Rogers St, Chapel  
Hill, Leeds LS1 4PE

If you like chasing and killing (and avoid) many then don't miss this. Not particularly original, my personal favourite.

It is based on a similar idea to *Fast Lane*. You are a bee swimming around eating pollen and a reward fruit. However, it is not run in the garden. There are hazards to watch out for. Insects and many looking food items are possible. Several spiders appear to chase and devour you. However, there are some tricks to your favour. If your resources are low enough.

Parts of the game consist of moving your which can speed your range. Spiders can be fed to stop the food and so on.

It is a extremely colorful game with onscreen graphics. There is a useful sound as well as some which means I could play late into the night and a high score table to watch the competition play.

My only problem was with the choice of food for movement — for several and question that was not a good idea to go and down. There is a patchy space which made it tricky, even though changes of direction were not tricky.

graphics	20%
playability	20%
graphics	20%
value for money	20%

★ ★ ★

# Flex your muscles on these!

Escape from Colditz, hurl boulders at robots and chase round mazes! Our reviewers have cooled down enough to tell you how they rated these active games

## Planetfall \$2K BBC £11.95

Argent Press Software, MoJ  
Cotton Square, London WC2  
0JL

This trading game is brought to you by the publishers of the magazine. You may be somewhat surprised therefore when I describe it as one of the best trading (or game) I have ever seen. My main reason is one that I like trading but the fact is that most underhand trading game I have played with seem to be an interesting and busy game.

The program has 11 different screen displays, all extremely laid out in colour with plenty of colour and sound. You have many options and can alter skill

levels and other options.

The play is a simple step around the galaxy buying and selling as you go and a stock map you have the chance to haggle with the prices. For anyone who a serious fan game playing it will be a real treat.

The only difficulty I have had is trying to get to the bank as the bank does not give enough credit on this aspect. An exciting one-on-one game play which is a truly computerised game.

graphics	20%
playability	20%
graphics	20%
value for money	20%

★ ★ ★ ★

## Colditz \$2K BBC £8.95

VPL, Elmwood House, Ridge St,  
Barnet, Herts

A nice little game in a box explaining how to run this program with a 0.40 operating system. The loading instructions are very clear and a 14-page booklet is included.

As you may have guessed, Colditz involves you escaping from the German POW camp. The screen displays a map of the kind you know. Using the mouse keys you can move around anything for escape routes and so on.

A door which is normally closed has a German guard outside. If you show him your gun you may open. Other doors are the same.

There are eight secret routes, the most difficult being through the cinema. When you have collected the materials, it is a surprise to find out. However, trying to leave the prison with the wrong equipment leaves you with 30 days in the water. This is equivalent to a new start.

Of course it's not that easy. Occasionally an appeal is called, and if you are caught for not appearing at you have with some materials you're in the prison.

Two word commands are used and they can't be abbreviated. A lot of coding.

graphics	20%
playability	20%
graphics	20%
value for money	20%

★ ★ ★

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For those of you who are teachers, there is a Masterclass video from the **BBC** (the **Electric**) can be used to test ideas in the primary classroom.

David Griffiths is the presenter on both the **BBC** and **Electric** video tapes and the primary education unit. He has been awarded with the **Ward** of the year for his work on the past 12 years, so he truly knows what he is talking about! His video-based courses on **PL-1** and **COMBOL** are now in rapid release too.

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[illegible]

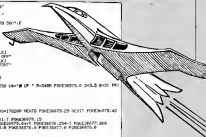
Page 18 HOME COMPUTING WEEKLY 21 May 1988

## VIC-20 PROGRAMS

[illegible]

1000 1000 1000 1000 1000 1000 1000 1000 1000 1000

01  
0010 PRINT "OF A LIGHT MOUNTAIN"  
0020 PRINT "YOU MUST FIND THE"  
0030 PRINT "CLIMBER AT THE"

[illegible]

## Bridge Master Dragon 32 £29.95

Dragon Data, Kewley Industrial  
Estate, Maccles, Port Talbot,  
Wales SA13 1PE

I can not do Bridge but I know only a little about the game so when Bridge Master dropped through my door, I thought this might be the chance to learn the great game of bridge. This expensive package includes a cartridge, a cassette containing 120 different board layouts, computer cards will be available on cassette, we are told, and two more computer manuals, one explaining the game and the other how the computer works. All this is reasonably well packaged but what of the content?

The program is designed for an beginner or less experienced player. The tutor takes you through the basics of the game and on to the more complex aspects. The package is far too expensive to discard, but with possible graphics for the later boards, has many helpful features for the novice and non-visual later touches that add fun and realism. The real test was to play a proper bridge (play) down on front of the computer, it did not and had to stop here every when I wanted to go home. T.C.G.

instructions	90%
playability	90%
graphics	75%
value for money	95%



## If I had a Million Dragon 32 £9.95

Fluorot, Stargate House, 114  
March Rd, Ruse, Maine

This is not the usual average package but two linked games, both of which must be successfully completed in order to move to the next one. Fluorot described this as action and adventure games, but doesn't live up to this, there are no action scenes and not real adventure! Rather the first game is a basic memory than the second and has the added interest of being far more than just play, think you to win.

The first is actually very like a famous property speculation

board game but instead of having the full board on display you get only the board two lines on. The aim of the game is to get £20,000 so that the player that has lost you a million for the next game. (Warning, 200,000 code, not by any odds the winner of game but is playing, you try to win your million over five million by stock trading and other movements. This requires the facility to check your cash for good or bad news. Over to involving package good on two but low on simplicity. D.C.

instructions	90%
playability	80%
graphics	10%
value for money	90%



## Lunar Rover Patrol Dragon £10.95

Dragon Data, Kewley Industrial  
Estate, Maccles, Port Talbot,  
Wales SA13 1PE

After your lunar buggy arrives at the surface of the moon it is ready for discovering a number of obstacles, including boulders, potholes and squarholes.

Movement is controlled by the joystick. Moving left or right causes the rover to spin, while up/down makes the buggy go many more meters. The gas button causes forward and vertical take off. As there are only four main controls, the computer does not find it too hard to control.

Points are given for jumping to clearing obstacles. A bonus is awarded according to speed of progress.

Your control were bad, the higher score are displayed on screen, as is the number of buggies left. What your buggy is displayed was resistant from the gas point reasonably good.

The system display was reasonably good, it was program I especially liked the way the buggy fell to pieces when it was hit.

Loading was no problem and the instructions included an tape.

For the vast of going to which it would become additional, but certainly very enjoyable. D.C.M.

instructions	70%
playability	75%
graphics	70%
value for money	70%



# Pit your wits against these!

New software for the Dragon  
is assessed by our reviewers

## Junior's Revenge Dragon 32 £10.95

Dragon Data, Kewley Industrial  
Estate, Maccles, Port Talbot,  
Wales SA13 1PE

Microsoft's Doublet King introduced The King has been one of the biggest selling Dragon games. This is the long awaited sequel to the successful original and something I could not wait to get my hands on. How are the old of the game that was displayed at the first game and what try to make you feel from the old character of Lord. The main playing, so no view, clattering up and down there but avoiding obstacles and eventually known as by Lord to stop you. As in the original

game, each year made the up for the where you are taken to a different screen. There are four screens involving transportation, character traits and all the other bits you would expect from the rest of game.

There is a choice of one of the two colour screens or the higher resolution black and white screen. The title page, demonstration mode and high score table are all up to the speed, but somewhat but I cannot help feeling that this game is not as good as the original. This is the 100 experience for an average. C.C.

instructions	90%
playability	90%
graphics	70%
value for money	90%



## El Bandito Dragon £7.95

Dragon Data, Kewley Industrial  
Estate, Maccles, Port Talbot,  
Wales SA13 1PE

The unlikely hero of this shooting game is an old who travels around a town making such while being hunted by the police. The aim is to go to the bank and disappear. You can then move the bank slowly back to your bar. If the police is on top, you can drop the bank and escape most quickly. The police cannot get you or your bar.

There are eight skill levels and players can watch control the number of quarters and complexity of the scene.

Two people can play, each that not only shoot you about results but also try and gain the high score your opponent shot. You learn each scene and have lots but it is possible to gain more points for each player and the higher score are displayed.

Screen display is excellent, immediately that the maximum colour is lost so problems loading the game and the programme are all solved.

Playing two people is a lot of laughs and it shall certainly be playing more than once. D.C.M.

instructions	70%
playability	80%
graphics	95%
value for money	85%



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1. *Journal of the American Medical Association*, 2000; 284: 2689-2695.

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1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results and Discussion**  
 5. **Conclusion**  
 6. **References**

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**Abstract**

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## ONE MAN'S VIEW

# What's next for a ban?

*It is generally accepted throughout the world that micro-technology is the field in which most of the future lies. Yet recent events — which occurred almost simultaneously — seem to suggest that the Establishment wishes to interfere with and directly control any advances made in this area.*

*The main event I speak of is, of course, the Ministry of Defence ban on ICL Data's software protection device.*

*The reason given for this was that it posed a threat to national security. Now, I'm only a 13-year-old schoolboy, but I don't think you'll consider my opinion too naive when I state that nearly any overpriced criminal/Russian spy could get hold of this device, or at least adapt the protected version (and make use of it), but or no ban.*

*Surely then, considering that software houses have created after such a device for years and the fact that it is a British product and would save the country millions from piracy, it would be best not to impose such a ban?*

*The only conclusion I can reach over this, then, is that the government wishes to stop the product (which can apparently be used down phone lines) from becoming generally available, giving them the ability to keep unrestricted tabs on the vast majority of us.*

*A recent Horizon programme, which many readers will have seen, dealt with exactly this subject and raised the question — "Given the choice of the government being able to listen in to all of us or none of us, which would you choose?"*

*They decided for none of us. The government itself, however, seems to think otherwise.*

*It is perhaps worth noting the security shindig which occurred at the GCHQ — a very sensitive area as far as buying computer communications is concerned.*

*Now, I don't pretend for a minute to know how much of a threat an trade union or whatever actually are, but the ban on them emphasises the already prominent question of what other restrictions Big Brother shall impose upon the computer industry in the name of National Security.*

*Am I misled?*  
*Founder of Random Thoughts*  
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| 4 Jet Set Willy | Software Projects  | Spectrum 122 |
| 5 Outburst      | Surf               | Spectrum 121 |
| 6 Jack & Jill   | Star               | Spectrum 114 |
| 7 Crazy Kong    | Interplay Software | Widow 111    |
| 8 Silver Alert  | Cosmos             | Spectrum 111 |
| 9 Cockroach Man | Widow 111          | Spectrum 114 |
| 10 The Guardian | IPS                | Spectrum 114 |

## NON-ARCADE

- |                             |                |              |
|-----------------------------|----------------|--------------|
| 1 Fantasy House             | AMS            | Spectrum 114 |
| 2 Golf 64                   | Acornsoft      | Comet 111    |
| 3 Pocket Pilot              | Alpha          | Spectrum 111 |
| 4 Night Train 332           | Alpha          | Comet 111    |
| 5 The King of the Hill      | Bug Byte       | Comet 111    |
| 6 Cockroach Man             | IPS            | Comet 111    |
| 7 Star Tracker              | Over Dark      | Spectrum 111 |
| 8 Test Match                | CL             | Spectrum 111 |
| 9 The Wizard & the Princess | Midnight House | Widow 111    |
| 10 Pool                     | Bug Byte       | Spectrum 111 |

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| 3 Mami's Master | Software Projects  |
| 4 Jet Set Willy | Software Projects  |
| 5 Outburst      | Surf               |
| 6 Jack & Jill   | Star               |
| 7 Crazy Kong    | Interplay Software |
| 8 Silver Alert  | Cosmos             |
| 9 Cockroach Man | Widow 111          |
| 10 The Guardian | IPS                |

### COMMODORE 64

- |                             |                |
|-----------------------------|----------------|
| 1 Fantasy House             | AMS            |
| 2 Golf 64                   | Acornsoft      |
| 3 Pocket Pilot              | Alpha          |
| 4 Night Train 332           | Alpha          |
| 5 The King of the Hill      | Bug Byte       |
| 6 Cockroach Man             | IPS            |
| 7 Star Tracker              | Over Dark      |
| 8 Test Match                | CL             |
| 9 The Wizard & the Princess | Midnight House |
| 10 Pool                     | Bug Byte       |

### DRAGON 32

- |                             |                |
|-----------------------------|----------------|
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| 2 Golf 64                   | Acornsoft      |
| 3 Pocket Pilot              | Alpha          |
| 4 Night Train 332           | Alpha          |
| 5 The King of the Hill      | Bug Byte       |
| 6 Cockroach Man             | IPS            |
| 7 Star Tracker              | Over Dark      |
| 8 Test Match                | CL             |
| 9 The Wizard & the Princess | Midnight House |
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Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.

### VIC-20

- |                 |                    |
|-----------------|--------------------|
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| 2 Obscured Flag | Polish             |
| 3 Mami's Master | Software Projects  |
| 4 Jet Set Willy | Software Projects  |
| 5 Outburst      | Surf               |
| 6 Jack & Jill   | Star               |
| 7 Crazy Kong    | Interplay Software |
| 8 Silver Alert  | Cosmos             |
| 9 Cockroach Man | Widow 111          |
| 10 The Guardian | IPS                |

### BBC

- |                             |                |
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| 2 Golf 64                   | Acornsoft      |
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| 5 The King of the Hill      | Bug Byte       |
| 6 Cockroach Man             | IPS            |
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| 10 Pool                     | Bug Byte       |

### Z801

- |                             |                |
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| 2 Golf 64                   | Acornsoft      |
| 3 Pocket Pilot              | Alpha          |
| 4 Night Train 332           | Alpha          |
| 5 The King of the Hill      | Bug Byte       |
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When all is said and done, will be aware how powerful the graphics capabilities of the machine are. There are several packages on the market for expanding BASIC to use these capabilities, and, in fact, David Brew described a down-converted package in several issues of Home Computing Weekly.

Many packages, David Brew's version included, have the disadvantage that although they offer a full range of facilities, they also tend to steal a large chunk of RAM. If you only want use or two bits of the package, they may prove impracticable.

In this article I shall describe some routines which, although they may be included in David's package, can be used on their own with a minimal overhead on RAM. The routines are all aimed at the use of graphics.

There seems to be a lot of interest in software concerning high-resolution graphics. Whilst their use is ideal for graph plotting routines, they tend to be RAM hungry, often slow and do have some limitations. For example, you can come up with a drawing of a river using high-resolution graphics. It's easy using redefined characters! These routines will offer an alternative to these. Whilst all routines require substantially, they can be used together.

The first routine will provide several capabilities by enabling you to plot points and draw lines to 60 by 30 resolution. Two sample routines are available.

To set or clear a point: SYS 49952,X,Y,Colour,Type. Type = 1 to set the point, type = 0 to clear the point.

To draw a line: SYS 49953,X1,Y1,X2,Colour,Type. Type = 1 draw line, 0 erase line.

These routines assume that the screen memory is in its normal place. They will not work if you move the screen. For fast drawing, it is best to use the routines directly from machine code. For machine code basics, I'll give details of the entry points later.

Listing 1 gives a BASIC loader for these routines. Some I show how they work.

When computers have the option for user defined characters, the 64 is no exception and, true to form, there is no restriction for creating them. The next set of routines fill this gap.

The first problem is where to put the new characters. To

# Great graphics which don't steal too much of your RAM

Listing 1 — medium resolution plot

```

1000 REM *****
1010 REM *****
1020 REM *****
1030 REM *****
1040 REM *****
1050 REM *****
1060 REM *****
1070 REM *****
1080 REM *****
1090 REM *****
1100 REM *****
1110 REM *****
1120 REM *****
1130 REM *****
1140 REM *****
1150 REM *****
1160 REM *****
1170 REM *****
1180 REM *****
1190 REM *****
1200 REM *****
1210 REM *****
1220 REM *****
1230 REM *****
1240 REM *****
1250 REM *****
1260 REM *****
1270 REM *****
1280 REM *****
1290 REM *****
1300 REM *****
1310 REM *****
1320 REM *****
1330 REM *****
1340 REM *****
1350 REM *****
1360 REM *****
1370 REM *****
1380 REM *****
1390 REM *****
1400 REM *****
1410 REM *****
1420 REM *****
1430 REM *****
1440 REM *****
1450 REM *****
1460 REM *****
1470 REM *****
1480 REM *****
1490 REM *****
1500 REM *****
1510 REM *****
1520 REM *****
1530 REM *****
1540 REM *****
1550 REM *****
1560 REM *****
1570 REM *****
1580 REM *****
1590 REM *****
1600 REM *****
1610 REM *****
1620 REM *****
1630 REM *****
1640 REM *****
1650 REM *****
1660 REM *****
1670 REM *****
1680 REM *****
1690 REM *****
1700 REM *****
1710 REM *****
1720 REM *****
1730 REM *****
1740 REM *****
1750 REM *****
1760 REM *****
1770 REM *****
1780 REM *****
1790 REM *****
1800 REM *****
1810 REM *****
1820 REM *****
1830 REM *****
1840 REM *****
1850 REM *****
1860 REM *****
1870 REM *****
1880 REM *****
1890 REM *****
1900 REM *****
1910 REM *****
1920 REM *****
1930 REM *****
1940 REM *****
1950 REM *****
1960 REM *****
1970 REM *****
1980 REM *****
1990 REM *****
2000 REM *****

```

Listing 2 — user-defined characters

```

1000 REM *****
1010 REM *****
1020 REM *****
1030 REM *****
1040 REM *****
1050 REM *****
1060 REM *****
1070 REM *****
1080 REM *****
1090 REM *****
1100 REM *****
1110 REM *****
1120 REM *****
1130 REM *****
1140 REM *****
1150 REM *****
1160 REM *****
1170 REM *****
1180 REM *****
1190 REM *****
1200 REM *****
1210 REM *****
1220 REM *****
1230 REM *****
1240 REM *****
1250 REM *****
1260 REM *****
1270 REM *****
1280 REM *****
1290 REM *****
1300 REM *****
1310 REM *****
1320 REM *****
1330 REM *****
1340 REM *****
1350 REM *****
1360 REM *****
1370 REM *****
1380 REM *****
1390 REM *****
1400 REM *****
1410 REM *****
1420 REM *****
1430 REM *****
1440 REM *****
1450 REM *****
1460 REM *****
1470 REM *****
1480 REM *****
1490 REM *****
1500 REM *****
1510 REM *****
1520 REM *****
1530 REM *****
1540 REM *****
1550 REM *****
1560 REM *****
1570 REM *****
1580 REM *****
1590 REM *****
1600 REM *****
1610 REM *****
1620 REM *****
1630 REM *****
1640 REM *****
1650 REM *****
1660 REM *****
1670 REM *****
1680 REM *****
1690 REM *****
1700 REM *****
1710 REM *****
1720 REM *****
1730 REM *****
1740 REM *****
1750 REM *****
1760 REM *****
1770 REM *****
1780 REM *****
1790 REM *****
1800 REM *****
1810 REM *****
1820 REM *****
1830 REM *****
1840 REM *****
1850 REM *****
1860 REM *****
1870 REM *****
1880 REM *****
1890 REM *****
1900 REM *****
1910 REM *****
1920 REM *****
1930 REM *****
1940 REM *****
1950 REM *****
1960 REM *****
1970 REM *****
1980 REM *****
1990 REM *****
2000 REM *****

```

accesses compatibility with the plotting routines, we are compelled to keep the screen in its normal place. To maintain loss of RAM, the new characters are kept in a block from 1040 to 1070. In general, however, we must cheat the use of BASIC up to 4096. There are two ways of doing this. First type in as a direct command the line:

POKE 14,14 POKE 15,140 NEW

As an alternative, a routine in this package can be used to do the job. Both of these methods will destroy any BASIC program in memory, so it is wise to do this job first. The call to protect the graphics is

SYS 49950,X

If X has any value other than 255, the location of BASIC is simply raised. A value of 255 will auto load the next program on tape giving a means of loading a sequence of programs. The remainder of the commands are:

1 SYS 49950,SET  
SET = 0 gives upper case  
SET = 1 gives lower case.

The routine enables us to the new set and gives the redefined characters from RAM to the new set. So that you know that all is well, a message is given when this command has finished. If you don't want the message to appear, e.g. in the middle of a program, poke location 1060 with 125.

1 SYS 49951 [M],M1,M2,M3,M4,M5,M6,M7,M8

This defines the shape of characters M. The square brackets are used so that you can easily see which character is involved. The eight parameters specify the shape of the character.

3 SYS 49952, enable user defined set  
SYS 49953, disable user defined set.

These are simple routines to enable you to use user or redefined characters as required.

Listing 2 gives a BASIC loader for these routines. We demonstrate to see what can be achieved with redefined characters. Look at Jeff Mason's Matrix or COSMOS: A Cosmic Challenge to see what can be done with some creative minds.

The new block of routines

## COMPORE 64 PROGRAMMING

**Listing 3.** is of more limited value but can be limited with the placement of commas to produce billboard-type displays. The routine draws a large character at a specified position on the screen. The characters are presented on narrow fields up from the standard CBIOS characters and are four characters high and four characters wide. Any of the numbers or alphas are available. The routine is called with

**Keywords:** child sexual abuse; disclosure; social support; self-esteem

where Y is the row where the top left hand corner of the character starts (0-79), X is the column where the character starts (0-39), CH is the ASCII value of the character (top CH = ASCII value of 'A', COLOR is the color of the character.

The final set of routines give a full range of turn and roll routines. The turn routines move the screen one character in the required direction and put a blank line in for other end of the screen. Roll moves the screen counter and puts the last line in the other end of the screen (similar to a continuous conveyor belt). Both the screen and column numbers are updated so that the appearance of the screen is correct.

The responses are coded for

11. *Journal of the American Medical Association*, 277, 1996, 1000-1001.

[illegible]

scroll down	575 32942
roll down	575 31836
scroll left	575 32619
roll left	575 33027
scroll right	575 31940
roll right	575 31844

The contents of location 901 specifies the number of rows recorded as rolled in the left or right. It has no effect on the scroll and roll down. Locations 4 and 5 load these contents. The locations can be used independently. Duma 4 stores/powers many of these contents to show what is possible.

Marking code aspects of lower plan. The interfacing of the planning routines to your own machine code routines is a simple matter.

**Point plot**  
X on top, mean 100  
Y on bottom, 100  
Color on top  
Point type on top  
Mean value 100

Line plus  
 51 on 902  
 51 on 903  
 52 on 904  
 52 on 905  
 Colour in 785  
 Line type in 907  
 Index from 1-100

Figure 5 — continued left and right

[illegible]

Age Group	A	B	C	D	E
18-24	45%	35%	10%	5%	5%
25-34	40%	30%	15%	10%	5%
35-44	35%	25%	20%	15%	5%
45-54	30%	20%	25%	20%	5%
55-64	25%	15%	30%	25%	5%
65+	20%	10%	35%	30%	5%

[illegible]

**Why use a big graphics program when you're only going to use parts of it? These routines, by HCW regular Allen Webb, are fast memory-efficient alternatives**

# COMMODORE 64 PROGRAMMING

```

10 REM DEMONSTRATION 1
20 REM
30 REM LOW RESOLUTION PATTERN
40 REM
50 REM A SIMPLE SQUARE IN 1000 X 1000 SCREEN
60 REM
70 REM THE SQUARE IS 100 X 100 PIXELS
80 REM
90 REM
100 REM
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM
200 REM
210 REM
220 REM
230 REM
240 REM
250 REM
260 REM
270 REM
280 REM
290 REM
300 REM
310 REM
320 REM
330 REM
340 REM
350 REM
360 REM
370 REM
380 REM
390 REM
400 REM
410 REM
420 REM
430 REM
440 REM
450 REM
460 REM
470 REM
480 REM
490 REM
500 REM
510 REM
520 REM
530 REM
540 REM
550 REM
560 REM
570 REM
580 REM
590 REM
600 REM
610 REM
620 REM
630 REM
640 REM
650 REM
660 REM
670 REM
680 REM
690 REM
700 REM
710 REM
720 REM
730 REM
740 REM
750 REM
760 REM
770 REM
780 REM
790 REM
800 REM
810 REM
820 REM
830 REM
840 REM
850 REM
860 REM
870 REM
880 REM
890 REM
900 REM
910 REM
920 REM
930 REM
940 REM
950 REM
960 REM
970 REM
980 REM
990 REM
1000 REM

```

Demonstration 1 — low resolution plotting



```

10 REM DEMONSTRATION 2
20 REM
30 REM HIGH RESOLUTION CHARACTER
40 REM
50 REM A SIMPLE SQUARE IN 1000 X 1000 SCREEN
60 REM
70 REM THE SQUARE IS 100 X 100 PIXELS
80 REM
90 REM
100 REM
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM
200 REM
210 REM
220 REM
230 REM
240 REM
250 REM
260 REM
270 REM
280 REM
290 REM
300 REM
310 REM
320 REM
330 REM
340 REM
350 REM
360 REM
370 REM
380 REM
390 REM
400 REM
410 REM
420 REM
430 REM
440 REM
450 REM
460 REM
470 REM
480 REM
490 REM
500 REM
510 REM
520 REM
530 REM
540 REM
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700 REM
710 REM
720 REM
730 REM
740 REM
750 REM
760 REM
770 REM
780 REM
790 REM
800 REM
810 REM
820 REM
830 REM
840 REM
850 REM
860 REM
870 REM
880 REM
890 REM
900 REM
910 REM
920 REM
930 REM
940 REM
950 REM
960 REM
970 REM
980 REM
990 REM
1000 REM

```

Demonstration 2 — user-defined character

```

10 REM DEMONSTRATION 3
20 REM
30 REM A SIMPLE SQUARE IN 1000 X 1000 SCREEN
40 REM
50 REM THE SQUARE IS 100 X 100 PIXELS
60 REM
70 REM
80 REM
90 REM
100 REM
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM
200 REM
210 REM
220 REM
230 REM
240 REM
250 REM
260 REM
270 REM
280 REM
290 REM
300 REM
310 REM
320 REM
330 REM
340 REM
350 REM
360 REM
370 REM
380 REM
390 REM
400 REM
410 REM
420 REM
430 REM
440 REM
450 REM
460 REM
470 REM
480 REM
490 REM
500 REM
510 REM
520 REM
530 REM
540 REM
550 REM
560 REM
570 REM
580 REM
590 REM
600 REM
610 REM
620 REM
630 REM
640 REM
650 REM
660 REM
670 REM
680 REM
690 REM
700 REM
710 REM
720 REM
730 REM
740 REM
750 REM
760 REM
770 REM
780 REM
790 REM
800 REM
810 REM
820 REM
830 REM
840 REM
850 REM
860 REM
870 REM
880 REM
890 REM
900 REM
910 REM
920 REM
930 REM
940 REM
950 REM
960 REM
970 REM
980 REM
990 REM
1000 REM

```

Demonstration 3 — use of 4 x 4 characters

```

10 REM DEMONSTRATION 4
20 REM A SIMPLE SQUARE IN 1000 X 1000 SCREEN
30 REM
40 REM THE SQUARE IS 100 X 100 PIXELS
50 REM
60 REM
70 REM
80 REM
90 REM
100 REM
110 REM
120 REM
130 REM
140 REM
150 REM
160 REM
170 REM
180 REM
190 REM
200 REM
210 REM
220 REM
230 REM
240 REM
250 REM
260 REM
270 REM
280 REM
290 REM
300 REM
310 REM
320 REM
330 REM
340 REM
350 REM
360 REM
370 REM
380 REM
390 REM
400 REM
410 REM
420 REM
430 REM
440 REM
450 REM
460 REM
470 REM
480 REM
490 REM
500 REM
510 REM
520 REM
530 REM
540 REM
550 REM
560 REM
570 REM
580 REM
590 REM
600 REM
610 REM
620 REM
630 REM
640 REM
650 REM
660 REM
670 REM
680 REM
690 REM
700 REM
710 REM
720 REM
730 REM
740 REM
750 REM
760 REM
770 REM
780 REM
790 REM
800 REM
810 REM
820 REM
830 REM
840 REM
850 REM
860 REM
870 REM
880 REM
890 REM
900 REM
910 REM
920 REM
930 REM
940 REM
950 REM
960 REM
970 REM
980 REM
990 REM
1000 REM

```

Demonstration 4 — scroll and fill



## SPRING 2001

Interface II  
9.95

Supplied with Quick Reference Cards to speed up setting to your frequency and other common control settings and feature storage assistance.

**26.95** plus £1 post & packing

[illegible]

As I mentioned, the 11 existing and additional 202 National Public Health Service Corps positions are composed of the same 11 Basic Health Needs, Special Needs and General Health Care positions. The positions are provided in the following table:

## RomSlot

Handled as fully compatible with all other subjects and a main consideration was to avoid any further development for maintenance.

**only 11.95** plus 50p post & packing



## Quickshot



1195

[illegible]

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

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These values are still lower in terms of the range of values observed in previous studies. This is not surprising as the range of values observed in the current study was limited by the range of values observed in the previous study.



# ANIROG

A cartoon character named Bongo, a grey mouse-like creature with large blue eyes, wearing a red shirt and red pants, pointing upwards with his right hand.

## BONGO

## Flight Path 737

A space-themed scene showing a large spaceship on the left and several smaller, colorful alien ships flying in the background.

### Space Pilot

Enjoy the television antics of the comical  
recluse as he collects the lost diamonds. He  
climbs ladders, slides down chutes, uses transporter  
and telephones to jump across the divide. Multi screen  
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Commodore 64 £7.95 — Vix 20 £7.95 — Spectrum £5.50

### Space Pilot

Realise your dreams of being king of the open skies.  
Fly your aircraft into smouldering dog fights with  
enemy fighters. Prove how well you can handle your craft.  
Five stages of tough engagements.  
Commodore 64 £7.95 — Spectrum £5.50

A scene from the Flight Path 737 game showing a large commercial airplane flying over a landscape with a large red sun or moon in the background.

### Flight Path 737

An advanced Pilot Trainer  
Written by a flight simulator  
instructor and pilot. Personal  
Pilot's eye view.  
Commodore 64 £7.95 — Vix 20 £7.95

## Also available on Disk at £9.95

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# Make your micro make music

In this fairly short program you can play the notes within a given octave using the letters as shown on the screen.

As a test, I played the music recorded in the entry 3132 and you can play a track later by pressing Y.

There are two keys for entering notes:

**SD G H J**  
**Z X C V B N M**

And there are the operational keys:

**Q** alters the octave (0-6), followed by 1 to lower or 2 to increase. Repeat for octave you're entering notes.

**W** changes the length of the note, followed by 1 to shorten duration or 2 to lengthen it. Repeat for octave you're to enter notes.

**E** ends the program.

**R** allows you to alter the envelope shape, 1 to lower and 2 to increase the envelope.

**T** alters the envelope period, again followed by 1 to shorten and 2 to increase.

I have tried to keep the program fairly short and in order to do so I have only used some of the four available sound channels.

In addition, you can only

```

1 REM ** SYNTHESIZER **
2 REM ** A PROGRAM FOR THE ORIC 1 --WORKS IN 16K AND 4
35. MACHINES **
3 REM ** WITHOUT ALTERATIONS **
4 REM
5 REM ** S.M. LUCAS **
10 TEXT:ORIG:PAPER7:INK4
12 PRINT:R4(6):REM TURN OFF KEY CLICK
13 PRINT:R4(17):REM TURN OFF CURSOR
15 DINT:(1000):REM USED TO STORE MUSIC - MAKE LARGER IF
YOU HAVE 40K
17 CLR
20 DOGOSUB1000:REM SET SCREEN DISPLAY
25 B=20:C=3:D=20:E=200:Y=0
30 DOGOSUB2000:REM GET NOTE AND PLAY IT!
40 IF#="Q"THENDOGOSUB3000:GOTO30:REM CHANGE OCTAVE
50 IF#="W"THENDOGOSUB4000:GOTO30:REM CHANGE DURATION
60 IF#="E"THENCLS:GOTO10,15,"THANK YOU FOR PLAYING!"P
RINT:R4(6):R4(17):END
70 IF#="R"THENDOGOSUB5000:GOTO30:REM CHANGE ENVELOPE
80 IF#="T"THENDOGOSUB6000:GOTO30
90 IF#="Y"THENDOGOSUB10000:GOTO30:REM REPLAY MUSIC
99# END
1000 FOR=20TO25:PLOT0,X,17:PLOT1,X,7:PLOT30,X,25:NEXT
1010 PLOT3,24,"Z X C V B N M"
1020 PLOT5,22,"S D E F G H J"
1030 PLOT14,14,"KEYS USED"
1040 PLOT3,19,"C D E F G A B"
1050 PLOT12,10,"For the notes:"
1055 PLOT1,14,1:PLOT3,14," S. M. LUCAS"
1060 FOR=1TO2:PLOT10,X,X*2:PLOT11,X,14:PLOT12,X,"Mini
synth":NEXT
1080 RETURN
2000 PLOT20,4,"KEYS":PLOT25,5,"Q= octave":PLOT25,6,"W=
note length"
2001 PLOT25,7,"E= end program":PLOT25,8,"R= envelope"
2002 PLOT25,9,"T= period"
2003 PLOT25,10,"Y= replay music"
2004 REPEAT
2005 A=0
2030 GET#A:REM SET VALUE OF A FOR NOTE BEING PLAYED
2040 IF#="2"THEN#=1 ELSEIF#="X"THEN#=3 ELSEIF#="C"
THEN#=5
2050 IF#="V"THEN#=6 ELSEIF#="B"THEN#=8 ELSEIF#="N"
THEN#=10
2060 IF#="W"THEN#=12

```

turn your Oric into a musical instrument and play back your masterpieces. Steve Lucas wrote his synthesiser program for 16K or 40K models

# ORIC PROGRAM

```

2070 IF A#="S" THEN A="C" ELSE IF A#="O" THEN A="A" ELSE IF A#="D"
THEN A="F"
2080 IF A#="H" THEN A="9" ELSE IF A#="J" THEN A="I"
2090 IF A#="B" THEN MUSIC(1,C,A,8):PLAY(3,B,D,E)
2100 V=Y+1:REM INCREMENT NOTE
2110 X(Y)=A:REM ADD NOTE TO SAVED MUSIC
2120 WAIT
2130 PLOT(3,B,D,B)
2140 UNTIL A#="S":GOTO="H":GOTO="E":GOTO="B":GOTO="T":GOTO="
T"
2150 RETURN
2160 PLOT(3,4,"":PLOT(3,5,"":PLOT(3,6,"
2170 PLOT(3,7,"":PLOT(3,8,"
PLOT(3,9,"
2180 PLOT(3,4,"CHANGE OCTAVE"
2190 PLOT(3,5,"lower=1 higher=2"
2200 PLOT(3,6,"press 'space bar' when ready"
2210 REPEAT
2220 P#="C":
2230 IF P#="1" THEN C="C" ELSE IF P#="2" THEN C="A"
2240 IF C#="B" THEN C="B"
2250 IF C#="A" THEN C#="B" :REM C=OCTAVE NUMBER
2260 PLOT(3,8,"OCTAVE No.:"
2270 PLOT(3,6,"STR#0:"
2280 UNTIL P#=""
2290 PLOT(3,4,"
2300 PLOT(3,5,"
2310 PLOT(3,6,"
2320 RETURN
2330 PLOT(3,4,"":PLOT(3,5,"":PLOT(3,6,"
2340 PLOT(3,7,"":PLOT(3,8,"
PLOT(3,9,"
2350 PLOT(3,4,"CHANGE DURATION"
2360 PLOT(3,5,"lower=1 higher=2"
2370 PLOT(3,6,"press 'space bar' when ready"
2380 REPEAT:P#="C":
2390 IF P#="1" THEN D="B" ELSE IF P#="2" THEN D="B" :10
2400 IF D#="B" THEN D="B"
2410 IF D#="B" THEN D="B"
2420 PLOT(3,8,"DURATION:"
2430 PLOT(3,6,"STR#1:"
2440 UNTIL P#=""
2450 PLOT(3,4,"
2460 PLOT(3,5,"
2470 PLOT(3,6,"

```

## How it works

1. set values of X and Y: music(1,C,A,8) allows the program to set the 1-1000 memory area
2. run off any disk and write
3. 10 Memory array X — used to store musical notes
4. call screen display sub routine (lines 1000-1099)
5. set default values of variables
6. call subroutines at 2080-2110 which in the main routine for entering music
7. call screen change subroutines (lines 1000-1100)
8. call screen display sub routine (lines 1000-1100)
9. main program when it is entered
10. call screen change routine (lines 1000-1100)
11. call routine to alter the duration (10/1000) time (lines 1000-1100)
12. call the DISPLAY sub routine (lines 1000-1100)
13. call subroutines called by lines above

uses 1,000 bytes in array X before an error occurs. This is no more compatible with the 16C Oric. If you want to write longer pieces you must increase the DATA statement in line 13.

## Input variables

- 1.10) musical notes written
- 2) key pressed
- 3) note
- 4) duration of WAIT command
- 5) octave
- 6) random mode
- 7) musical period
- 8) number of notes in array

Notes: Use the space bar, or any other key, for a pause. It would be recommended that you write the music and then enter the envelope to avoid using the different editors.

ORIC



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